VII.—INSTRUMENT FOR MEASURING GRAIN, &c.

The LARGE SILVER MEDAL *was this Session presented to* W. CAFFIN, *Esq. of Woolwich Common, for his* INSTRUMENT FOR MEASURING GRAIN, *&c., a Model of which has been placed in the Society's Repository.*

SIR, Woolwich Common, March 5, 1827.

I HAVE to request you will be good enough to submit to the Society a model of a machine invented by me, for measuring, in the most accurate and expeditious manner, seed, corn, or any article in which struck measure is necessary. I have to request you will excuse any informalities in my manner of submitting this, which can only proceed from my ignorance of the usual forms.

I am, Sir,

A. Aikin, Esq. &c. &c. &c.

Secretary, &c. &c. WILLIAM CAFFIN.

Description of the Machine.—Plate VII.

The measures *d d*, fig. 18, are fixed vertically in a circular plate *f*, opposite to each other, with an axis between them, upon which they work between two other plates. On the top plate *y y* a hopper *w* is fixed, communicating alternately with the measures, and filling them; and on the opposite side, in the bottom plate *a*, is a hole, with a spout *z*, through which the discharge takes place. The plates are framed together by three pillars *b b b*, having double adjusting nuts *c c* on each, to regulate the distance of the plates.

The measures are moved by a handle or lever *e*, the motion of which is limited by the pins *g g*, which, while it presents one under the hopper to receive, places the other immediately over the discharging hole for delivery, so that the two operations of filling and discharging are going on at one and the same moment. The bottom of each measure is contracted, to retard, in a small degree, the discharge, so as to secure one measure to be filled before the other is emptied. A hole is cut in the top plate, over the discharging measure, by which it may be ascertained that it is always full, as well as that the whole contents are delivered: *x* is the handle.

Machines of the size of the model have been in use for six months past, for filling cartridges, and a boy delivers with ease 12,500 measures daily from one machine, in the most accurate and perfect way possible, and supplies his hopper himself.

Fig. 16 is a view, and fig. 17 is a section, of the instrument.

Fig. 18 shows the measures, with the plate and axis to which they are attached.

Fig. 19 is a top view of fig. 18, and fig. 20 is a top view of fig. 16, the hopper being represented by a dotted circle.

VIII.—SLIDING RUDDER.

The LARGE SILVER MEDAL *was this Session presented to Mr.* JOSEPH HILLMAN, *of Deptford, for a* SLIDING RUDDER, *a Model of which has been placed in the Society's Repository.*

SHIPS of war, and other large vessels, if they happen to strike the ground when riding heavily at anchor, or by tailing on a sand-bank, are very liable to injure the